Digital Photography on a Budget

"The Ten Percent Solution"

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I. Prior practice

- Minolta PS3000
  - Slow, proprietary connection and software
  - 400 dpi maximum
  - B/W and grayscale only; no color
  - Given to us at no cost

- "Book-friendly" Xerox copier
  - High quality output
  - Not really book friendly
  - Current Ricoh copier even less book-friendly

"Book Friendly?"

More like, "Better than Nothing"

II. Why we no longer use face-up scanner

- ➢ Frequent problems
  - ➢ Had to wait for each scan to upload before starting another
  - ➢ Often would freeze up and require cycling unit off/on, and/or rebooting
  - ➢ Fixed focus and narrow DoF latitude
  - ➢ Minolta support not exemplary
  - ➢ It died a natural (unlamented) death

- ➢ PS3000 superseded by PS7000
  - ➢ Cost of PS7000 approximately $15,000
  - ➢ Low end; better hardware much more expensive
  - ➢ Still only B/W or grayscale

- ➢ Did not have $15,000 and no hope of raising that much
  - ➢ Still need capability of providing photocopy quality book reproduction
  - ➢ Limited to photocopy quality output by library administration

III. Using digital camera on copystand in lieu of face-up scanner

- Prepared list of necessary components and prices in October 2004
  - Already had unused copystand with light fixtures
  - Computer workstation could be obtained at no cost
    - Pentium 4, 512 Mb RAM, 2.8 GHz processor
    - Windows XP
    - 17" CRT monitor
  - Estimated cost for components $1,500, one-tenth of $15,000

III. (continued)

- "Bare Essentials"
    - Digital SLR (interchangeable lens) camera
    - Zoom lens (18-55mm)
    - Right angle viewfinder (easier viewing of subject)
    - AC adapter (no battery charging)
    - Direct USB connection with a computer (no memory cards)
    - Photoshop (Elements would work fine)
    - Cable shutter release
    - Copystand with adjustable arms for at least two lights
    - Computer workstation
    - Adobe Acrobat to create PDF

III. (continued)

➢ Point-and-Shoot camera not good choice
  ➢ May not have tripod socket
  ➢ Accessories - right angle viewfinder - not available

➢ Chose Canon Digital Rebel with 18-55mm "kit" lens
  ➢ Canon software not TWAIN; cannot shoot directly into Photoshop
  ➢ Nikon would also work
  ➢ Not sure about other manufacturers because of accessories

Canon Digital Rebel – 6 MP
18-55mm lens
Right angle viewfinder
4 x 100W incandescent
    spotlight bulbs

Special Collections &
    Archives,
Milton S. Eisenhower
    Library

IV. What we can provide to patrons

- ➢ Most output to monochrome laser printer
  - ➢ Because monochrome, no need for color correction
    - ■ Lights are 4 x 100W standard incandescent spotlight bulbs
    - ■ Newer copystands provide for two lights, so increase wattage
  - ➢ Standard camera output is JPEG, at medium file-size setting
  - ➢ Raw is possible, but rarely used
    - ■ Slows workflow because images upload much slower
    - ■ Requires individual Raw processing before images can be printed
    - ■ Will use Raw when special attention is needed
  - ➢ Images can be delivered on CD, if precise color work is needed

IV. (continued)

- ➢ Also have standard color inkjet printer
    - ➢ Rarely used
    - ➢ Print heads clog when inkjet rarely used

- ➢ If text is readable, it's good enough
    - ➢ Non color-corrected lights give a color cast
    - ➢ Comes across as gray on a monochrome printer
    - ➢ As long as contrast is great enough between text and background
    - ➢ 50¢ per page (image)
    - ➢ Easy, automated image improvements in Photoshop if needed

- ➢ For better quality, can schedule photographer to set up a shoot
    - ➢ Will take much more time
    - ➢ Cost much higher ($30 just for one image)

V. Workflow

➢ Photocopy forms state copies from bound materials will require digital camera
  ➢ Patron given form with price and rules
  ➢ Patron indicates which pages are desired
  ➢ Couple of pages can be done while patron waits, depending on staff
  ➢ Larger orders require more time and a deposit

➢ Book placement on copy deck
  ➢ Lay book open flat if it will not cause stress on bindings
  ➢ Two facing pages can be done in one shot if the open spread is approx. 8½ x 11
  ➢ If book tightly bound or fragile, one side supported by hand or foam wedge

V. (continued)

- Shooting
  - Camera set to automatic and autofocus
    - Most work done by students; not expected to be photographers
    - For critical or special jobs, I may shoot it and change to manual settings
  - Set JPEG quality setting (in software) to Low or Medium
  - Center book in viewfinder and zoom as close as possible
  - Raise or lower camera platform as needed
  - Make sure autofocus works; blank pages can be trouble
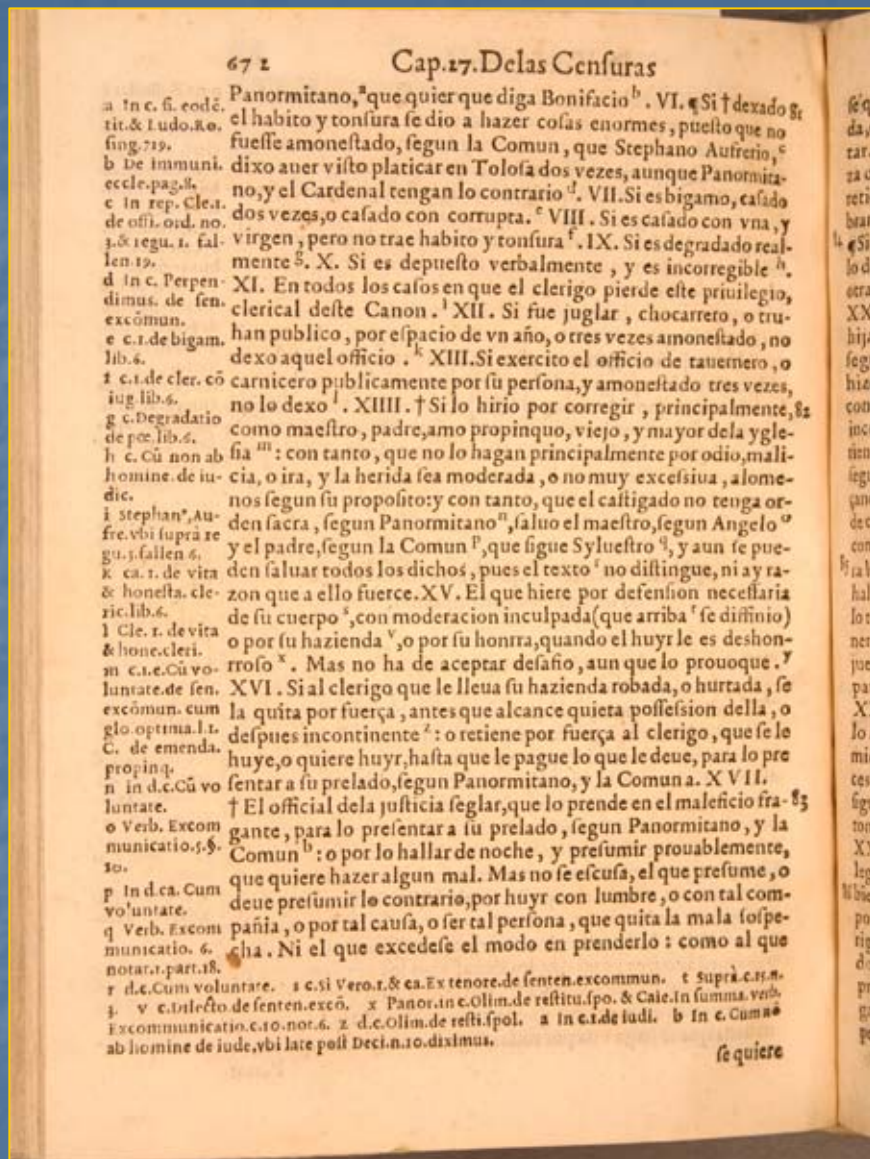 - Insert paper "source" target alongside image

V. (continued)

- ➢ If book is kept in same placement, turn page, click, turn page, click...
    - With JPEGs, you can shoot at least 20 frames quickly
    - May need to pause to let upload catch up, and check placement
- ➢ When finished shooting, disconnect camera and turn off lights
- ➢ Open images in Photoshop, check focus and contrast, and print
    - Can crop and do minor image corrections
    - Can create PDF if needed
    - Can send images on CD
    - Can send images via Ariel
    - Images are NOT publication quality
- ➢ Unless paper copies are handed to patron, always keep images on disk, at least temporarily
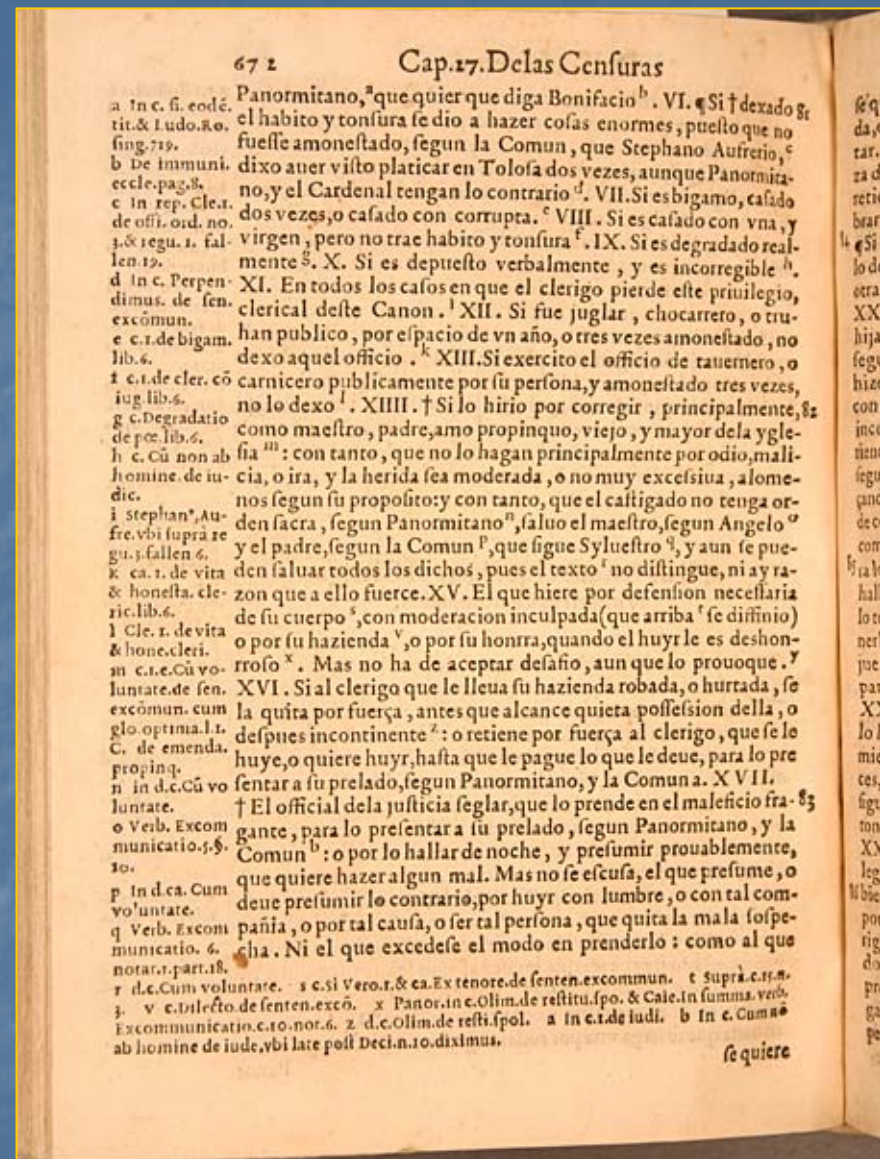
V. (continued)

- Camera setup for George Peabody Library
    - In March 2006, decided to build same type of system at GPL
    - Canon Digital Rebel (6 MP) superseded by Digital Rebel XT (8 MP)
    - Also needed copystand

- If higher image quality is needed, invest in better lights & lens
    - Color corrected lights
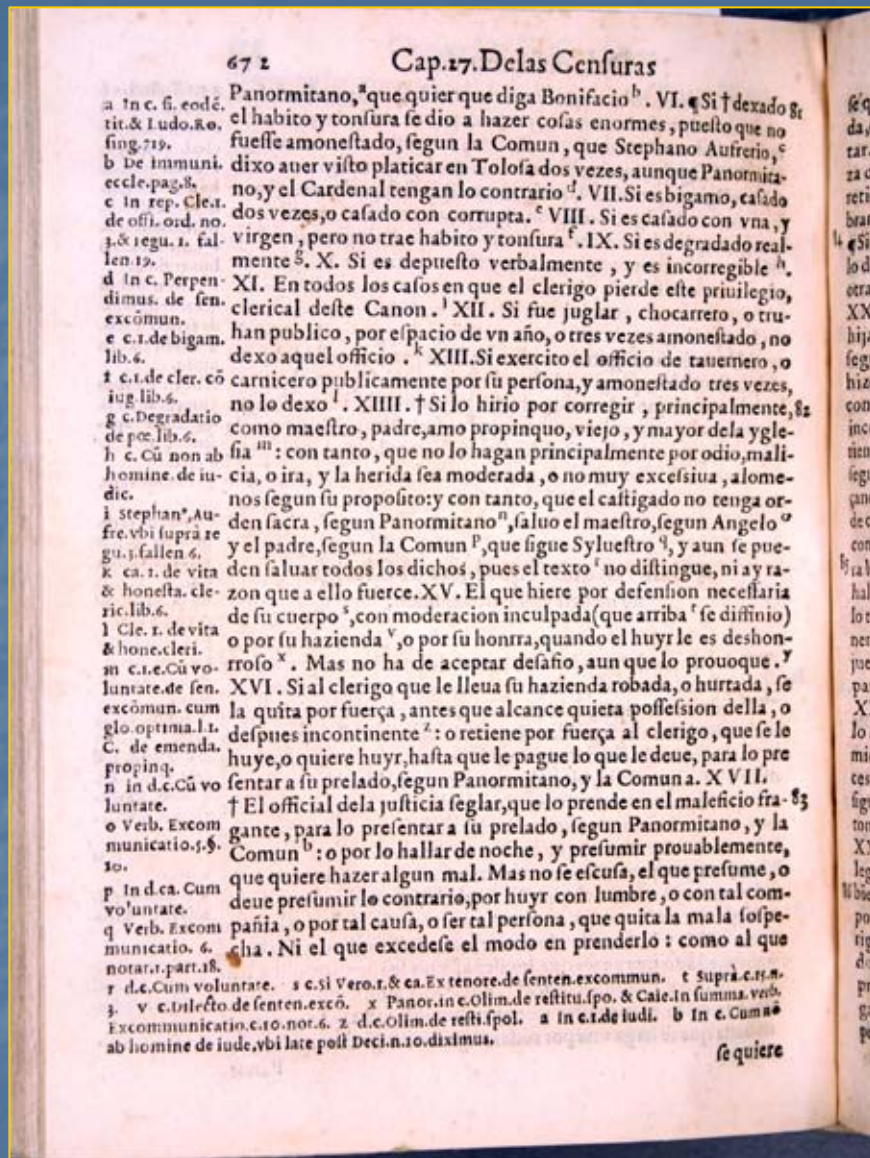   - Lens with glass in it

Examples of camera output (1)
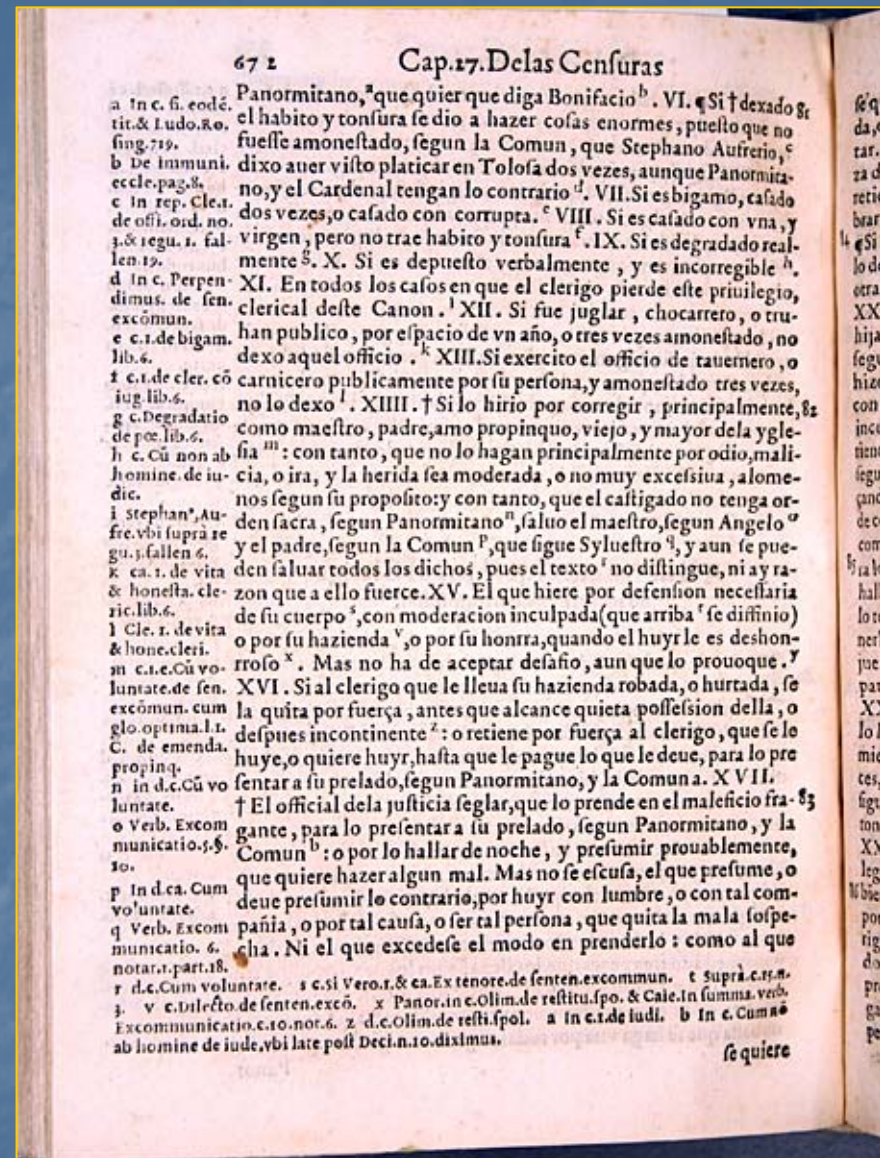
A. As shot, f/5.6 @ 1/60 second; ISO equivalent 100

B. Same as (A) with Unsharp Mask sharpening added

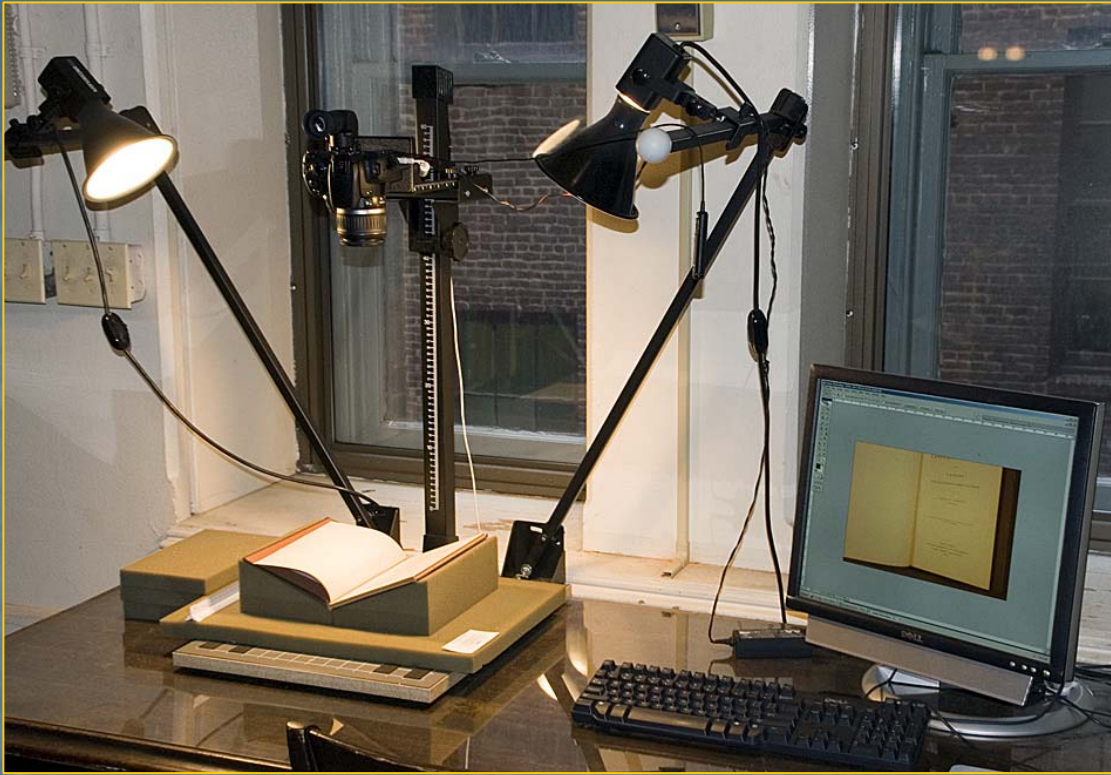Examples of camera output (2)

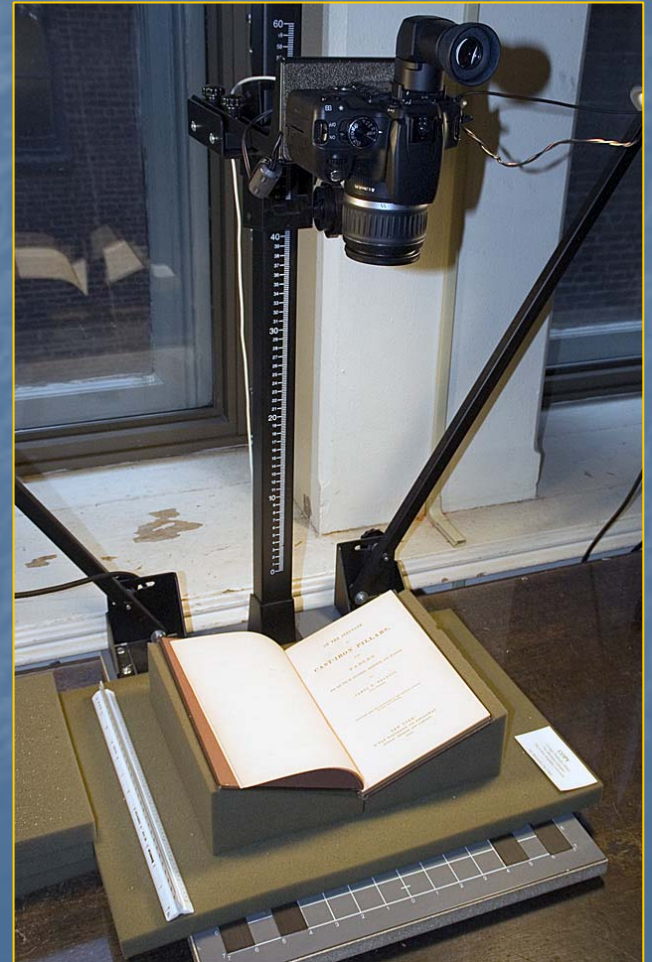C. (A) with Auto Levels adjustment; No sharpening

D. (C) with Unsharp Mask sharpening added

George Peabody Library

Canon Digital Rebel XT – 8 MP
18-55mm lens
Right angle viewfinder
Beseler CS-14 copystand with
    2 x 200W incandescent spotlight bulbs

VI. Current pricing and recommendations (Adorama Camera, NYC)

- ➢ Canon Digital Rebel XTi ($517.00)
    - ➢ 10 MP
    - ➢ Includes software and USB interface cable

- ➢ Canon EF-S 18-55mm autofocus "kit" lens ($170.00)

- ➢ Canon Angle Finder C ($190.00)

- ➢ Canon ACK-DC20 AC Adapter Kit ($50.00)

- ➢ Canon RS-60 E3 Remote Switch ($27.00)

- ➢ Beseler CS-14 Copystand Kit ($560.00) [B&H PhotoVideo, NYC]
    - ➢ Includes copystand, 2 light arms, 2 light fixtures & 2 reflectors
    - ➢ Assembly required
    - ➢ Lights will accommodate up to 600W; suggest 2 x 200W lights

- ➢ Total of above = **$1,514.00** (Remember, PS7000 sells for $15,000)

VI. (continued)

- ➢ Copystand not dependent on camera brand

- ➢ Nikon offers comparable accessories and perhaps better range of lower-end cameras

- ➢ Incidentals not included
    - ➤ Light bulbs (Home Depot or online source)
    - ➤ Additional cables/extensions

- ➢ Computer workstation not mentioned

- ➢ May be able to acquire used camera; make sure accessories also available

VII. Links

➢ www.usa.canon.com

➢ nikonusa.com

➢ www.adorama.com

➢ www.bhphotovideo.com

Or, for those more adventurous (or frugal):

➢ www.ebay.com

Thank You!

Questions? Comments?

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This presentation can also be found at

http://tinyurl.com/5yfdxa